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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
10/645,911	08/22/2003	Hisatsugu Kurita	047297-0137	8557
22428	7590	03/10/2005	EXAMINER	
FOLEY AND LARDNER			KORNAKOV, MICHAEL	
SUITE 500			ART UNIT	
3000 K STREET NW			PAPER NUMBER	
WASHINGTON, DC 20007			1746	

DATE MAILED: 03/10/2005

Please find below and/or attached an Office communication concerning this application or proceeding.

## Office Action Summary

Application No.

10/645,911

Applicant(s)

KURITA ET AL.

Examiner

Michael Komakov

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-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

### Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
  - If the period for reply specified above is less than thirty (30) days, a reply within the statutory minimum of thirty (30) days will be considered timely.
  - If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
  - Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133).
- Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

### Status

- 1) ☒ Responsive to communication(s) filed on 22 August 2003.
- 2a) ☐ This action is **FINAL**. 2b) ☒ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

### Disposition of Claims

- 4) ☒ Claim(s) 1-4 is/are pending in the application.
- 4a) Of the above claim(s) \_\_\_\_\_ is/are withdrawn from consideration.
- 5) ☐ Claim(s) \_\_\_\_\_ is/are allowed.
- 6) ☒ Claim(s) 1-4 is/are rejected.
- 7) ☐ Claim(s) \_\_\_\_\_ is/are objected to.
- 8) ☐ Claim(s) \_\_\_\_\_ are subject to restriction and/or election requirement.

### Application Papers

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☒ The drawing(s) filed on 22 August 2003 is/are: a) ☐ accepted or b) ☒ objected to by the Examiner.
- Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).
- Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

### Priority under 35 U.S.C. § 119

- 12) ☒ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☒ All b) ☐ Some \* c) ☐ None of:
- 1) ☒ Certified copies of the priority documents have been received.
  - 2) ☐ Certified copies of the priority documents have been received in Application No. \_\_\_\_\_.
  - 3) ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

\* See the attached detailed Office action for a list of the certified copies not received.

### Attachment(s)

- 1) ☒ Notice of References Cited (PTO-892)
- 2) ☐ Notice of Draftsperson's Patent Drawing Review (PTO-948)
- 3) ☒ Information Disclosure Statement(s) (PTO-1449 or PTO/SB/08)  
Paper No(s)/Mail Date 08/22/2003.
- 4) ☐ Interview Summary (PTO-413)  
Paper No(s)/Mail Date. \_\_\_\_\_.
- 5) ☐ Notice of Informal Patent Application (PTO-152)
- 6) ☐ Other: \_\_\_\_\_.

## DETAILED ACTION

### *Drawings*

1. Figure 1 should be designated by a legend such as --Prior Art-- because only that which is old is illustrated. See MPEP § 608.02(g). Corrected drawings in compliance with 37 CFR 1.121(d) are required in reply to the Office action to avoid abandonment of the application. The replacement sheet(s) should be labeled "Replacement Sheet" in the page header (as per 37 CFR 1.84(c)) so as not to obstruct any portion of the drawing figures. If the changes are not accepted by the examiner, the applicant will be notified and informed of any required corrective action in the next Office action. The objection to the drawings will not be held in abeyance.

### *Claim Objections*

2. Claims 3 and 4 are objected to because of the following informalities: Claims 3 and 4 accordingly recite the **density** of the ozonated water being 10 to 60 ppm and the density of the hydrofluoric acid, being 0.5-2%. Apparently, the **concentrations** of ingredients are indicated. Appropriate correction is required.

### *Claim Rejections - 35 USC § 102*

3. The following is a quotation of the appropriate paragraphs of 35 U.S.C. 102 that form the basis for the rejections under this section made in this Office action:

A person shall be entitled to a patent unless –

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(b) the invention was patented or described in a printed publication in this or a foreign country or in public use or on sale in this country, more than one year prior to the date of application for patent in the United States.

(e) the invention was described in (1) an application for patent, published under section 122(b), by another filed in the United States before the invention by the applicant for patent or (2) a patent granted on an application for patent by another filed in the United States before the invention by the applicant for patent, except that an international application filed under the treaty defined in section 351(a) shall have the effects for purposes of this subsection of an application filed in the United States only if the international application designated the United States and was published under Article 21(2) of such treaty in the English language.

4. Claims 1-4 are rejected under 35 U.S.C. 102(b) as being anticipated by JP10-256211.

JP'211 teaches silicon substrate cleaning method, utilizing the subsequent steps of treating the substrate with ozonized water, followed by treating the substrate with hydrofluoric acid, wherein the said treatment steps can be repeated (0009, 0013, 0020). Therefore, the steps of oxidizing with ozonated water just after the oxidation step and the hydrofluoric acid cleaning step, as recited in the instant claim 2, is clearly envisaged in the teaching of JP'211. The concentration of ozone in ozonized solution is 5.4 ppm (0015). The concentration of HF is 0.5 %wt. Regarding the specific limitation of claim 1, reciting "thus obtaining a silicon wafer in which micro roughness thereof under spatial frequency of 20/ m is 0.3 to 1.5 nm<sup>3</sup> in terms of power spectrum density", it is noted here that It is axiomatic that one who performs the steps of the known process must necessarily produce all of its advantages. Mere recitation of a newly discovered function or property, that is inherently possessed by things in the prior art **does not cause a claim** drawn to these things to distinguish over the prior art, consult *In Re* Leinoff v. Louis Milona & Sons, Inc. 220 USPQ 845 (CAFC 1984). Because JP'211 teaches

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cleaning method with the steps, identical to those instantly claimed, the outcome of JP'211 method is identical to the instantly recited.

Therefore, all the limitations of the instant claims are explicitly or inherently met by JP'211.

5. Claims 1-4 are rejected under 35 U.S.C. 102(e) as being anticipated by Peng et al (U.S. 2004/0127032).

Peng teaches cleaning of various silicon materials, including mono-crystalline silicon wafer (0019). The method of Peng comprises the steps of cleaning the wafer with oxidizing ozone containing aqueous solution, wherein the concentration of ozone is 15 to 30 ppm; cleaning the wafer with liquid HF, wherein the concentration of HF is 0.5-2 %wt; cleaning the wafer with the same oxidizing ozone containing solution. Regarding the specific limitation of claim 1, reciting "thus obtaining a silicon wafer in which micro roughness thereof under spatial frequency of 20/ m is 0.3 to 1.5 nm<sup>3</sup> in terms of power spectrum density", it is noted here that It is axiomatic that one who performs the steps of the known process must necessarily produce all of its advantages. Mere recitation of a newly discovered function or property, that is inherently possessed by things in the prior art **does not cause a claim** drawn to these things to distinguish over the prior art, consult *In Re* Leinoff v. Louis Milona & Sons, Inc. 220 USPQ 845 (CAFC 1984). Because Peng teaches cleaning method with the steps, identical to those instantly claimed, the outcome of the method of Peng is identical to the instantly recited.


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Therefore, all the limitations of the instant claims are explicitly or inherently met by Peng.

Any inquiry concerning this communication or earlier communications from the examiner should be directed to Michael Kornakov whose telephone number is (571) 272-1303. The examiner can normally be reached on 9:00am - 5:30pm.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Michael Barr can be reached on (571) 272-1414. The fax phone number for the organization where this application or proceeding is assigned is 703-872-9306.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free).



Michael Kornakov  
Primary Examiner  
Art Unit 1746

03/04/2005